

Conceptual Background for *Making Learning and Thinking Visible in Italian Secondary Schools*

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In 2017, Project Zero began a collaboration with Indire (Istituto Nazionale Documentazione Innovazione Ricerca Educativa - www.indire.it) in Italy. The collaboration, *Making Learning and Thinking Visible in Italian Secondary Schools (MLTV)*, explored how two of Project Zero's pedagogical frameworks—*Making Learning Visible (MLV)* and *Visible Thinking (VT)*—could be adapted with integrity in Italian public secondary schools.

Indire is Italy's national public research institute responsible for innovation in education, teacher training, and dissemination of best practices in Italian schools. Indire has a growing network (Avanguardie Educative) of over 700 schools serving students from 6 to 19 years old. These schools are trying to revolutionize the way teaching and learning occur in Italy—to move from a transmission model of schooling to a system that prepares students to thrive in the constantly changing knowledge society. The goals of Avanguardie Educative align with three questions at the center of many PZ initiatives: What's worth understanding today and tomorrow? What do thinking and learning look like? How and where do thinking and learning thrive?

Several fundamental principles underlie PZ's pedagogical frameworks:

- *Thinking* is more than a matter of skill; it is dispositional, distributed, and can be made visible through particular routines and practices. *Dispositional* refers to the idea that all good thinking involves three components: ability, attitude (or motivation), and alertness (or sensitivity to occasions when thinking would be helpful). *Distributed* takes into account the view that knowledge is socially constructed among individuals, groups, and cultural tools and artifacts (see definition of *group* below).
- *Learning* is a consequence of thinking (Perkins, 1992); it is purposeful, emotional, empowering, social, and representational (Krechevsky et al., 2013). Learning takes place throughout the lifespan.
- *Understanding* refers to applying what one knows in new situations. Knowledge and skill in and of themselves do not guarantee understanding. Understanding is something one *does* or *performs*, rather than *possesses*—how you think *with* what you know, e.g., generalizing, finding new examples, taking multiple perspectives, or representing an idea in multiple ways (Perkins & Blythe, 1994).
- Understanding requires prioritizing *depth over breadth* (Gardner, 1993). In order for students to develop understanding, they need to spend enough time with a topic so they can consider it from multiple perspectives and apply it to different situations. This inevitably means reducing the breadth of the content taught in service of studying fewer topics more deeply. The teacher's role shifts from one of delivering content to engaging students with key ideas and concepts that can build understanding.

Like many other PZ frameworks, *Making Learning Visible* and *Visible Thinking* are designed to support:

- *Transformational* as well as technical learning (Mezirow, 2000) (technical learning refers to the application of proven knowledge and skills in practice; i.e., doing something *better*;

transformational learning refers to questioning fundamental assumptions and beliefs and developing new theories; i.e., doing something *different*)

- *Adult* learning as much as student learning
- The shift from a *transmission* to a more *inquiry-based* model of learning

Making Learning Visible

The *Making Learning Visible* framework (Project Zero & Reggio Children, 2001; Krechevsky *et al.*, 2013) draws attention to the power of the group as a learning environment and documentation as a way to see how and what the learners are learning. *MLV* is based on collaborative research initially conducted by PZ researchers with educators from the municipal preschools in Reggio Emilia, and subsequently with preschool through secondary school educators in the U.S.

Learning appears in the framework in all its complexity:

Rather than reducing children's or adults' thinking and learning to discrete bits of information that can be produced via simple-answer questions, we are interested in the learning processes and outcomes involved in solving problems or creating products that are considered meaningful in a culture [Gardner, 1983]. ...We resist the tendency to simplify the complexity of either the individual's or the group's learning process or the content being learned. The type of learning in which we are interested engages students cognitively, emotionally, and aesthetically. It is situated in real-world problem-solving that draws on critical and creative thinking as well as disciplinary knowledge and skills.

(Krechevsky and Mardell, 2001, p.285)

The definition of *group* is similarly nuanced:

...we refer not only to what individuals learn by virtue of participating in a group, but also to a more distributed kind of learning that extends beyond the learning of any one person. Research suggests that we need to rethink our notions of human cognition as residing inside the heads of individuals and consider a view of knowledge as socially constructed and distributed among individuals, groups, and cultural tools and artifacts (such as books or computers). We believe that participation in groups is key to the construction of individual learning. We also believe that group learning can lead to creating a community culture or collective knowledge that is larger than what any one individual knows.

(*Ibid.*)

MLV defines a learning group as *a collection of persons who are emotionally, intellectually, and aesthetically engaged in solving problems, creating products, and making meaning...in which each person learns autonomously and through the ways of learning of others.* (*ibid.*) There are many similarities between *MLV* and other cooperative and group learning approaches; however, cooperation is not the same as collaboration in the functioning of a learning group. Cooperation tends to emphasize getting along, being helpful, and taking an assigned role in a group. Although this can be valuable, *collaboration that draws students into direct engagement with each other's ideas and ways of thinking,*

through working together to solve problems and make products, is likely to produce a more powerful environment for thinking and learning.

In addition, group learning techniques often target individual learning and achievement. *MLV* suggests that learning in groups can extend beyond the individual to create a shared and public body of knowledge—similar to knowledge-building processes in the disciplines or professions. *MLV* focuses on small group learning, in particular, as an essential component of powerful learning. The framework identifies specific strategies to support such learning, like forming groups intentionally; designing compelling tasks that require a group perspective in order to be successfully carried out; and purposefully balancing individual, small-group, and whole-class learning.

Many people think of *documentation* as an official record or evidence of an experience or event; it is seen as historical or retrospective, rather than prospective. In the field of education, documentation often refers to data collected for reporting or assessment purposes. However, in the *MLV* framework, documentation is not just a record of what happened, but also an analysis or interpretation of the learning that took place. It can take different forms, such as written notes, a video clip, or a photo and excerpts from a conversation, but **more important than the artifacts themselves, documentation refers to what teachers or learners do with the artifacts in order to support learning.** *MLV* defines documentation as *the practice of observing, recording, interpreting, and sharing through different media the processes and products of learning in order to deepen learning* (Krechevsky et al., 2013). Documentation can serve different purposes during different stages of learning, but it always focuses on some aspect of learning, not just what happened or what was done.

Upon first encounter, some people think *MLV* is about using documentation to make learning visible, perhaps because it is the most tangible aspect of the work. Others think *MLV* is a framework for supporting learning in groups, through documentation and other means. Ultimately, they come to realize that *MLV* speaks to cultural assumptions, values, and beliefs about the kind of world we want to live in and people we want to become. **Learning in groups supports more than content knowledge; it also develops critical human capacities for participating in a democratic society—the ability to share our views and listen to those of others, to understand multiple perspectives, to negotiate conflict, and to seek connections.**

Visible Thinking

Visible Thinking (Ritchhart et al., 2011; Perkins, et al., 2000; Tishman et al., 1994) is an approach to teaching thinking that develops students' thinking dispositions, such as the inclination to be curious, open-minded, or planful, while also deepening their understanding of the topics they study. Many educators would agree that it is important to teach students to think. Such efforts typically focus on thinking skills like reasoning, problem-solving, and providing evidence to support a claim. However, if students are to apply these skills with flexibility in a variety of contexts, teaching thinking skills alone is not sufficient. Decades of research at PZ and elsewhere show that **the dispositional side of thinking (e.g., alertness to opportunities for thinking and the motivation to do so) is also critical.**

One of the main goals of teaching students to think is to help them develop different kinds of understanding in different subject areas. This means engaging students in intellectual activity that is authentic to the discipline—e.g., finding or solving problems by drawing on concepts and methods that are characteristic of what scientists, historians, artists, or mathematicians do. Some types of thinking are specific to certain disciplines—e.g., developing a proof in mathematics. However, the Visible Thinking research team also identified certain types of high-leverage thinking moves that are likely to support the development of understanding across disciplines. The list they came up with is not exhaustive; rather, it identifies key types of thinking without which it would be difficult to say one had developed understanding in a discipline. The moves provide a starting place for considering the kinds of thinking in which to engage students. There are at least eight moves (see also, Figure 1 below):

- Observing closely and describing what's there
- Building explanations and interpretations
- Reasoning with evidence
- Making connections
- Considering different viewpoints and perspectives
- Capturing the heart and forming conclusions
- Wondering and asking questions
- Uncovering complexity and going below the surface of things



Figure 1: A Map of Thinking Involved in Understanding

Understanding is not the only goal of thinking. Thinking is also required to solve problems, make decisions, and form judgments, among other things. However, if understanding is one of the primary purposes of school, then the thinking moves are an attempt to identify the kinds of high-leverage thinking involved in developing understanding. They help teachers become clearer about what they mean when they say they want students to “think”, which then helps them plan the learning experience.

Once teachers have articulated where they and their students are headed, *thinking routines* provide a way to help make student thinking visible and to deepen their understanding. Thinking routines are tools that teachers can use to support specific thinking moves such as activating prior knowledge or using metaphors to make connections. They also provide purposeful and easy-to-learn structures and language that can help students become more metacognitive about their thinking. The routines can be used for:

- Introducing and exploring ideas
- Synthesizing and organizing ideas
- Digging deeper into ideas

The routines can be used individually or as a group, with any grade level or content area, and with children or adults. Over time, the routines become patterns of behavior—as common as brushing one’s teeth—that teachers and learners can adopt and apply flexibly in diverse contexts.

Similarities between the *MLV* and *VT* Frameworks

The *Making Learning Visible* and *Visible Thinking* frameworks share a number of assumptions and beliefs:

- Thinking and learning are fundamentally social endeavors
- Thinking and learning are distributed across individuals, groups, and cultural artifacts and resources
- Making thinking and learning visible helps to make thinking and learning possible
- In order for classrooms to be cultures of thinking and learning for students, schools must be cultures of thinking and learning for adults.

Documentation is key to both *MLV* and *VT*. Documentation is a powerful way to investigate and make visible the thinking and learning taking place in a learning community. Is student or teacher thinking visible in classrooms and public spaces (or online forums)? Are works-in-progress visible in the classroom? Do teachers review documentation of student thinking and learning to determine what, in fact, students learned from a lesson or experience, and to inform next steps? Documentation supports students learning from and with each other, as well as the teacher. It allows thinking and learning to become a resource for the entire community—one that can be revisited to deepen, extend, or challenge learning.

For more information about emerging insights from the MLTV project, please see the forthcoming report (link coming soon).